

Inventions of the Industrial Revolution

Lesson Purposes:

- **Students will research an invention of the Industrial Revolution in order to create an expository writing paper containing an introductory paragraph, three to five factual paragraphs, and a concluding paragraph. This research paper may have up to three photos/illustrations.**
- **Students will learn how to create citations for their resources in proper MLA format. At least one source must be from printed material (not an online resource).**
- **The research paper will be submitted to Mrs. Datzman via Google by Thursday, May 26.**

Objectives: Through Internet and library research, students will research and take notes using a graphic organizer about an invention created during the Industrial Revolution. They will write an expository essay that will be typed, edited and revised, spell-checked, and subsequently published containing properly formatted resource citations. Citations can be submitted to Easybib.com for correct formatting.

Time Frame: Approximately 6-8 50-minute classes for research, writing, editing and revising, and publishing.

Procedure:

Mrs. Datzman will go through the research process, note-taking, plagiarism, citing sources the correct way. The first class or two will cover the specifics of the paper. Class time will be used for research, writing, editing, revising, and submitting the paper to Mrs. Datzman using the student's Google account.

Inventions of the Industrial Revolution Lesson

Choose an invention from the following website or use the other source attached to this packet to create an essay about the invention:

Inventions and Inventors of the Nineteenth Century

<http://inventors.about.com/library/weekly/topicsub19.htm?pid=2821&cob=home>

Industrial Revolution Era Inventions 1800 - 1899

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| 1800 | <ul style="list-style-type: none">Frenchmen, J.M. Jacquard invents the Jacquard Loom.Count Alessandro Volta invents the battery |
| 1804 | <ul style="list-style-type: none">Freidrich Winzer (Winsor) was the first person to patent gas lighting.Richard Trevithick, an English mining engineer, developed the first steam-powered locomotive. Unfortunately, the machine was too heavy and broke the very rails it was traveling on. |
| 1809 | <ul style="list-style-type: none">Humphry Davy invents the first electric light - the first arc lamp. |
| 1810 | <ul style="list-style-type: none">German, Frederick Koenig invents an improved printing press.Peter Durand invents the tin can. |
| 1814 | <ul style="list-style-type: none">George Stephenson designs the first steam locomotive.The first plastic surgery is performed in England.German, Joseph von Fraunhofer invents the spectroscope for the chemical analysis of glowing objects.Joseph Nicéphore Niépce was the first person to take a photograph. He took the picture by setting up a machine called the camera obscura in the window of his home in France. It took eight hours for the camera to take the picture. |
| 1815 | <ul style="list-style-type: none">Humphry Davy invents the miner's lamp. |
| 1819 | <ul style="list-style-type: none">Samuel Fahnestock patents a "soda fountain".René Laënnec invents the stethoscope. |
| 1823 | <ul style="list-style-type: none">Mackintosh (raincoat) invented by Charles Mackintosh of Scotland. |
| 1824 | <ul style="list-style-type: none">Professor Michael Faraday invents the first toy balloon.Englishmen, Joseph Aspdin patents Portland cement, the modern building material. |
| 1825 | <ul style="list-style-type: none">William Sturgeon invented the electromagnet. |
| 1827 | <ul style="list-style-type: none">John Walker invents the modern matches.Charles Wheatstone invents the microphone. |
| 1829 | <ul style="list-style-type: none">American, W.A. Burt invents a typewriter.Frenchmen, Louis Braille invents braille printing.William Austin Burt patents a typographer, a predecessor to the typewriter. |

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| 1830 | <ul style="list-style-type: none"> Frenchmen, B. Thimonnier invents a sewing machine. |
| 1831 | <ul style="list-style-type: none"> American, Cyrus H. McCormick invents the first commercially successful reaper. Michael Faraday invents a electric dynamo. |
| 1832 | <ul style="list-style-type: none"> Englishmen, Louis Braille invents the stereoscope. |
| 1834 | <ul style="list-style-type: none"> Henry Blair patents a corn planter, he is the second black person to receive a U.S. patent. Jacob Perkins invents an early refrigerator (really an ether ice machine). |
| 1835 | <ul style="list-style-type: none"> Englishmen, Henry F. Talbot invents Calotype photography. Solymon Merrick patents the wrench. Englishmen, Francis Pettit Smith invents the propeller. Charles Babbage invents a mechanical calculator. |
| 1836 | <ul style="list-style-type: none"> Francis Pettit Smith and John Ericcson co-invent the propellor. Samuel Colt invented the first revolver. |
| 1837 | <ul style="list-style-type: none"> Samuel Morse invents the telegraph. English schoolmaster, Rowland Hill invents the postage stamp. |
| 1838 | <ul style="list-style-type: none"> Samual Morse invents Morse Code. |
| 1839 | <ul style="list-style-type: none"> American, Thaddeus Fairbanks invents platform scales. American, Charles Goodyear invents rubber vulcanization. Frenchmen, Louis Daguerre and J.N. Niepce co-invent Daguerreotype photography. Kirkpatrick Macmillan invents a bicycle. Welshmen, Sir William Robert Grove conceives of the first hydrogen fuel cell. |
| 1840 | <ul style="list-style-type: none"> Englishmen, John Herschel invents the blueprint. |
| 1841 | <ul style="list-style-type: none"> Samuel Slocum patents the stapler. |
| 1842 | <ul style="list-style-type: none"> Joseph Dart builds the first grain elevator. |
| 1843 | <ul style="list-style-type: none"> Alexander Bain of Scotland, invents the facsimile. |
| 1844 | <ul style="list-style-type: none"> Englishmen, John Mercer invents mercerized cotton. |
| 1845 | <ul style="list-style-type: none"> American, Elias Howe invents a sewing machine. Robert William Thomson patents the first vulcanised rubber pneumatic tire. |
| 1846 | <ul style="list-style-type: none"> Dr. William Morton, a Massachusetts dentist, is the first to use anesthesia for tooth extraction. |
| 1847 | <ul style="list-style-type: none"> Hungarian, Ignaz Semmelweis invents antiseptics. |
| 1848 | <ul style="list-style-type: none"> Waldo Hanchett patents the dental chair. |
| 1849 | <ul style="list-style-type: none"> Walter Hunt invents the safety pin. |

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| 1850 | <ul style="list-style-type: none"> Joel Houghton was granted the first dishwasher patent in 1850. The machine was made of wood and required you to hand-turn a wheel that caused water to splash on the dishes. Houghton's machine barely worked. The first practical dishwasher was invented by a woman named Josephine Cochran in 1886. Dishwashers, however, did not begin appearing in homes until the 1950s. |
| 1851 | <ul style="list-style-type: none"> Isaac Singer invents a sewing machine. |
| 1852 | <ul style="list-style-type: none"> Jean Bernard Léon Foucault invents a gyroscope. Henri Giffard builds an airship powered by the first aircraft engine - unsuccessful design. |
| 1853 | <ul style="list-style-type: none"> George Cayley invents a manned glider. |
| 1854 | <ul style="list-style-type: none"> John Tyndall demonstrates the principles of fiber optics. |
| 1855 | <ul style="list-style-type: none"> Isaac Singer patents the sewing machine motor. Georges Audemars invents rayon. |
| 1856 | <ul style="list-style-type: none"> Louis Pasteur invents pasteurisation. |
| 1857 | <ul style="list-style-type: none"> George Pullman invents the Pullman Sleeping Car for train travel. |
| 1858 | <ul style="list-style-type: none"> Hamilton Smith patents the rotary washing machine. Jean Lenoir invents an internal combustion engine. |
| 1861 | <ul style="list-style-type: none"> Elisha Otis patents elevator safety brakes, creating a safer elevator. Pierre Michaux invents a bicycle. Linus Yale invents the Yale lock or cylinder lock. |
| 1862 | <ul style="list-style-type: none"> Dr. Richard Gatling patents the machine gun. Alexander Parkes invents the first man-made plastic. |
| 1866 | <ul style="list-style-type: none"> Alfred Nobel invents dynamite. J. Osterhoudt patents the tin can with a key opener. Englishmen Robert Whitehead invents a torpedo. |
| 1867 | <ul style="list-style-type: none"> Christopher Scholes invents the first practical and modern typewriter. |
| 1868 | <ul style="list-style-type: none"> George Westinghouse invents air brakes. Robert Mushet invents tungsten steel. J P Knight invents traffic lights. |
| 1872 | <ul style="list-style-type: none"> J.S. Risdon patents the metal windmill. A.M. Ward issues the first mail-order catalog. |
| 1873 | <ul style="list-style-type: none"> Joseph Glidden invents barbed wire. |
| 1874 | <ul style="list-style-type: none"> American, C. Goodyear, Jr. invents the shoe welt stitcher. |

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| 1876 | <ul style="list-style-type: none"> Alexander Graham Bell patents the telephone. Nicolaus August Otto invents the first practical four-stroke internal combustion engine. Melville Bissell patents the carpet sweeper. |
| 1877 | <ul style="list-style-type: none"> Thomas Edison invents the cylinder phonograph or tin foil phonograph. Eadweard Muybridge invents the first moving pictures. |
| 1878 | <ul style="list-style-type: none"> Sir Joseph Wilson Swan was the first person to invent a practical and longer-lasting electric lightbulb. |
| 1880 | <ul style="list-style-type: none"> The British Perforated Paper Company invents a form of toilet paper. Englishmen, John Milne invents the modern seismograph. |
| 1881 | <ul style="list-style-type: none"> Alexander Graham Bell invents the first crude metal detector. David Houston patents the roll film for cameras. Edward Leveaux patents the automatic player piano. |
| 1884 | <ul style="list-style-type: none"> George Eastman patents paper-strip photographic film. Frenchmen, H. de Chardonnet invents rayon. Lewis Edson Waterman invents the first practical fountain pen. James Ritty invents the first working, mechanical cash register. Charles Parson patents the steam turbine. |
| 1885 | <ul style="list-style-type: none"> Harim Maxim invents the machine gun. Karl Benz invents the first practical automobile to be powered by an internal-combustion engine. Gottlieb Daimler invents the first gas-engined motorcycle. |
| 1886 | <ul style="list-style-type: none"> Josephine Cochrane invents the dishwasher. Gottlieb Daimler builds the world's first four-wheeled motor vehicle. John Pemberton invents Coca Cola. |
| 1887 | <ul style="list-style-type: none"> German, Heinrich Hertz invents radar. Rowell Hodge patents barbed wire. Emile Berliner invents the gramophone. F.E. Muller and Adolph Fick invent the first wearable contact lenses. |
| 1888 | <ul style="list-style-type: none"> Marvin Stone patents the spiral winding process to manufacture the first paper drinking straws. John Boyd Dunlop patents a commercially successful pneumatic tire. Nikola Tesla invents the AC motor and transformer. |
| 1889 | <ul style="list-style-type: none"> Joshua Pusey invents the matchbook. Sir James Dewar and Sir Frederick Abel co-invent Cordite - a type of smokeless gunpowder. |
| 1891 | <ul style="list-style-type: none"> Jesse W. Reno invents the escalator. |
| 1892 | <ul style="list-style-type: none"> Rudolf Diesel invents the diesel-fueled internal combustion engine. Sir James Dewar invents the Dewar flask or vacuum flask. |
| 1893 | <ul style="list-style-type: none"> American, W.L. Judson invents the zipper. Edward Goodrich Acheson invents carborundum. |

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| 1895 | <ul style="list-style-type: none"> Lumiere Brothers invent a portable motion-picture camera, film processing unit and projector called the Cinematographe. Lumiere Brothers using their Cinematographe are the first to present a projected motion picture to an audience of more than one person. |
| 1896 | <ul style="list-style-type: none"> American, H. O'Sullivan invents the rubber heel. |
| 1898 | <ul style="list-style-type: none"> Edwin Prescott patents the roller coaster. Rudolf Diesel receives patent #608,845 for an "internal combustion engine" the Diesel engine. |
| 1899 | <ul style="list-style-type: none"> I.R. Johnson patents the bicycle frame. J.S. Thurman patents the motor-driven vacuum cleaner. |
| 1900 | <ul style="list-style-type: none"> The zeppelin invented by Count Ferdinand von Zeppelin. Charles Seeberger redesigned Jesse Reno's escalator and invented the modern escalator. |
| 1901 | <ul style="list-style-type: none"> King Camp Gillette invents the double-edged safety razor. The first radio receiver, successfully received a radio transmission. Hubert Booth invents a compact and modern vacuum cleaner. |
| 1902 | <ul style="list-style-type: none"> Willis Carrier invents the air conditioner. French physicist George Claude invents neon light. The lie detector or polygraph machine is invented by James Mackenzie. The birth of the Teddy Bear. George Claude invented neon light. |
| 1903 | <ul style="list-style-type: none"> Edward Binney and Harold Smith co-invent crayons. Bottle-making machinery invented by Michael J. Owens. The Wright brothers invent the first gas motored and manned airplane. Mary Anderson invents windshield wipers. William Coolidge invents ductile tungsten used in lightbulbs. |
| 1904 | <ul style="list-style-type: none"> Teabags invented by Thomas Sullivan. Benjamin Holt invents a tractor. John A Fleming invents a vacuum diode or Fleming valve. |
| 1905 | <ul style="list-style-type: none"> Albert Einstein published the Theory of Relativity and made famous the equation, $E = mc^2$. Mary Anderson receives a patent for windshield wipers. |
| 1906 | <ul style="list-style-type: none"> William Kellogg invents Cornflakes. Lewis Nixon invents the first sonar like device. Lee DeForest invents electronic amplifying tube (triode). |
| 1907 | <ul style="list-style-type: none"> Leo Baekeland invents the first synthetic plastic called Bakelite. Color photography invented by Auguste and Louis Lumiere. The very first piloted helicopter was invented by Paul Cornu. |
| 1908 | <ul style="list-style-type: none"> The gyrocompass invented by Elmer A. Sperry. Cellophane invented by Jacques E. Brandenberger. Model T first sold. J W Geiger and W Müller invent the geiger counter. Fritz Haber invents the Haber Process for making artificial nitrates. |

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| 1909 | <ul style="list-style-type: none"> • Instant coffee invented by G. Washington. |
| 1910 | <ul style="list-style-type: none"> • Thomas Edison demonstrated the first talking motion picture. • Georges Claude displayed the first neon lamp to the public on December 11, 1910, in Paris. |
| 1911 | <ul style="list-style-type: none"> • Charles Franklin Kettering invents the first automobile electrical ignition system. |
| 1912 | <ul style="list-style-type: none"> • Motorized movie cameras invented, replaced hand-cranked cameras. • The first tank patented by Australian inventor De La Mole. • Clarence Crane created Life Savers candy in 1912. |
| 1913 | <ul style="list-style-type: none"> • The crossword puzzle invented by Arthur Wynne. • The Merck Chemical Company patented, what is now know as, ecstasy. • Mary Phelps Jacob invents the bra. • Gideon Sundback invented the modern zipper. |
| 1914 | <ul style="list-style-type: none"> • Garrett A. Morgan invents the Morgan gas mask. |
| 1915 | <ul style="list-style-type: none"> • Eugene Sullivan and William Taylor co-invented Pyrex in New York City. |
| 1916 | <ul style="list-style-type: none"> • Radios tuners invented, that received different stations. • Stainless steel invented by Henry Brearly. |
| 1917 | <ul style="list-style-type: none"> • Gideon Sundback patented the modern zipper (not the first zipper). |
| 1918 | <ul style="list-style-type: none"> • The superheterodyne radio circuit invented by Edwin Howard Armstrong. Today, every radio or television set uses this invention. • Charles Jung invented fortune cookies. |
| 1919 | <ul style="list-style-type: none"> • The pop-up toaster invented by Charles Strite. • Short-wave radio invented. • The flip-flop circuit invented. • The arc welder invented. |
| 1920 | <ul style="list-style-type: none"> • The tommy gun patented by John T Thompson. • The Band-Aid (pronounced 'ban-'dade) invented by Earle Dickson. |
| 1921 | <ul style="list-style-type: none"> • Artificial life begins -- the first robot built. • John Larson invented the lie detector. |
| 1922 | <ul style="list-style-type: none"> • Insulin invented by Sir Frederick Grant Banting. • The first 3-D movie (spectacles with one red and one green lens) is released. |
| 1923 | <ul style="list-style-type: none"> • Garrett A. Morgan invents a traffic signal. • The television or iconoscope (cathode-ray tube) invented by Vladimir Kosma Zworykin. • John Harwood invented the self-winding watch in 1923. • Clarence Birdseye invents frozen food. |
| 1924 | <ul style="list-style-type: none"> • The dynamic loudspeaker invented by Rice and Kellogg. • Notebooks with spiral bindings invented. |
| 1925 | <ul style="list-style-type: none"> • The mechanical television a precursor to the modern television, invented by John Logie Baird. |

Find information for the following questions:

Paragraph 1 (Introduction (2 – 5 sentences):

Selected Invention: _____

Inventor's Name: _____

Paragraph 2 – Inventor's Biography:

Name of Inventor: _____

Where/When Born: _____

Education: _____

Which Country Lived: _____

Paragraph 3 - Invention Description:

Name/Picture: _____

Year/Place Created: _____

What Does It Do: _____

How Does It Work: _____

How does this invention impact the life of the people of this time period? This can be where you insert a picture of the inventor and the invention. Did this inventor have other inventions related to this one?

How did the invention happen? Who benefitted from this invention?

Paragraph 4 - Improvements:

What other inventions came about later because of this early version of this invention?

Paragraph 5 - Your Personal Connection to this Invention:

How does this invention impact your life?

Paragraph 6 – Concluding paragraph, sum up the importance of this invention:

Name: _____ Period ____ Grade: ____ Date: _____

Inventions Expository Writing Rubric

| Task | 4 | 3 | 2 | 1 | Total |
|--------------------------------|--|--|--|--|--------------|
| Content | All content complete | Content complete but not accurate | Content somewhat incomplete | Serious deficiencies in content | |
| Specific Details | Reasons fully elaborated with specific detail | Mix of general with a few specific details | Mostly general details | May have few/vague details | |
| Organizational Strategy | Strong organizational strategy | Satisfactory organization | May be disorganized | Too brief to indicate organization | |
| Fluency | Fluent | Somewhat fluent | May be awkward and confused | Awkward and confused | |
| Spelling/ Grammar | No spelling or grammatical errors | One or two spelling and/or grammatical errors | Three or four spelling and/or grammatical errors | Many spelling and/or grammatical errors | |
| Work Cited | Work cited in proper MLA format | Work cited has websites but only some were in proper MLA format | No attempt made to put work cited into MLA format but websites included | No Work Cited page | |
| Total = 24 points | | | | | |